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**Portraits of botanists.**—In 1903 WITTROCK published a set of photographs of botanists selected from the collection at the botanical garden at Stockholm. A second series has now been issued,<sup>11</sup> containing full-page portraits of 100 botanists arranged chronologically from Aristotle to Goebel; and 51 additional plates, each containing 6 portraits. The biographic notes contain a large amount of information which must have been brought together with great labor.—J. M. C.

**British Desmidiaceae.**—In 1904 the first volume of this work was issued as a publication of the Ray Society. The second volume has now appeared,<sup>12</sup> containing the genera *Euastrum* (46), *Micrasterias* (18), and *Cosmarium* (50).—J. M. C.

### NOTES FOR STUDENTS.

**Regeneration.**—The number of recent papers dealing with regeneration indicates a marked activity in this field of investigation. The work of IRMISCH and others has made us familiar with the fact that the hypocotyls of a number of plants can produce adventitious buds. In some cases these occur normally, but in others only in the presence of more unusual conditions of growth. BURNS and HEDDEN<sup>13</sup> have investigated these conditions, using seedlings of *Linaria bipartita splendida*, *Antirrhinum majus*, and *Linum usitatissimum*. They confirm KÜSTER's results that when the cotyledon or the main vegetative tip is cut away the tendency toward the development of adventitious buds is greatly increased. On uninjured seedlings of *Antirrhinum* which do not stand erect but are horizontal, buds arise only on the upper side, and when these plants are fastened so that they must remain erect they produce no buds. The effect of a moist atmosphere is to increase the number of buds and the rapidity of their development. The same is true of higher temperature. The older parts of the hypocotyl have a much greater capacity to produce buds than the younger parts, and there is no tendency at all to bud production on the part of the hypocotyl still elongating. Gravity seems to have no influence. Light, on the other hand, is a necessary condition, for in one-sided illumination buds appear only on the illuminated side, on a klinostat in the light on all sides equally, and in the dark not at all. Experiments are mentioned which indicate that wounding is not a cause of the regeneration here. The explanation of the phenomena mentioned as given by the authors is that "when the cotyledons are removed

<sup>11</sup> WITTROCK, VEIT BRECHER, *Catalogus illustratus iconothecae botanicae horti Bergiani Stockholmiensis; notulis biographicis adjectis*. Acta Hort. Berg. 3:No.3. pp. xciii + 245. pls. 151. 1905.

<sup>12</sup> WEST, W., and G. S., *A monograph of the British Desmidiaceae*. Vol. II. pp. x + 206. pls. 32. London: Ray Society. 1905.

<sup>13</sup> BURNS, GEORGE P., and HEDDEN, MARY E., *Conditions influencing regeneration of the hypocotyl*. Beih. Bot. Centralb. 19:383-397. 1906.